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(54) Title: **METHYL-CPG BINDING DOMAIN PROTEIN 2 HOMOLOGS**

(57) Abstract: Two novel proteins, MBD2-CTH1 and MBD2-CTH2, are described that share extensive sequence homology to MBD2. These novel proteins lack MBDs and do not bind methylated DNA, but do, however, localize to the nucleus and assemble into transcriptional repressor complexes. These properties of MBD2-CTH1 and MBD2-CTH2 demonstrate that one or both of the homologs acts as dominant negative inhibitors of MBD2. MBD2-CTH1 and MBD2-CTH2, thus, provide new reagents for inhibiting methylation-dependent repression and thereby treat various pathologies, e.g. colon cancer.

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